

MIOSHA Ergonomics Information Resources Index (2-15-2011)

http://www.michigan.gov/dleg/0,1607,7-154-11407_30453-93831--,00.html#ergo

Ergonomics and Lifting

Publication Title	Publication	Revision Date	Type/Order Form
Office Ergonomics Checklist	<u>0103</u>	01/04	<u>Brochure</u>
Computer Ergonomics	<u>0104</u>	06/10	<u>Brochure</u>
Lift Safely	<u>0311</u>	02/08	<u>Poster</u>
Lift Safely	<u>0203</u>	01/05	<u>Card</u>
Safe Lifting Techniques	<u>0001</u>	01/04	<u>5-minute talk</u>
Lift Safely	<u>0401</u>	03/04	<u>Sticker</u>
Heavy Load (Lifting)	<u>0315</u>	01/10	<u>Poster</u>
Manual Handling of Materials	<u>0009</u>	06/05	<u>5-minute talk</u>
Ergonomics	GISHD #001 (<u>doc / pdf</u>)	06/09	<u>Fact Sheet</u>



VIDEO DISPLAY TERMINAL AND OFFICE ERGONOMICS CHECKLIST



ORGANIZATION OF WORK AREA

SPACE

YES NO

1. Work surface and work area large enough to hold materials and equipment and perform required tasks ☐ ☐
2. Storage space adequate for copies, handbooks, documents, and notebooks ☐ ☐
3. Area under desk free of obstructions ☐ ☐
4. Area under work surface provides sufficient depth, height, and width for legs to move about freely ☐ ☐

JOB AIDS AND EQUIPMENT POSITIONING

1. Job aids, tools and materials placement allows efficient flow of work ☐ ☐
2. Items used frequently (telephone, calculators, etc.) within easy reach without extensive body movement ☐ ☐
3. Document holder available and positioned to avoid frequent eye and head movement ☐ ☐
4. Cables and cords positioned to prevent tripping ☐ ☐
5. Headset available for high volume telephone use ☐ ☐

BODY POSTURE FOR SEATED POSITION

1. Lower back support ☐ ☐
2. Thighs approximately horizontal ☐ ☐
3. Lower part of leg approximately vertical ☐ ☐
4. Keyboard height allows forearms and wrists to be in a neutral (straight) position ☐ ☐
5. Monitor at least 12-18" away from worker ☐ ☐
6. Top of monitor screen approximately eye level ☐ ☐
7. Mouse positioned to allow forearm and wrist to be in a neutral position ☐ ☐
8. Feet rest flat on floor, or footrest provided, when needed ☐ ☐
9. No prolonged forward bending ☐ ☐
10. Minimum amount (or infrequent) bending or twisting of the back, head, or neck ☐ ☐



CHAIR

CHAIR FEATURES

	<u>YES</u>	<u>NO</u>
1. Stable with five point base (safe from tipping over)	<input type="checkbox"/>	<input type="checkbox"/>
2. Castors appropriate for safe mobility on floor surface	<input type="checkbox"/>	<input type="checkbox"/>
3. Swivels	<input type="checkbox"/>	<input type="checkbox"/>
4. Seat dimensions	<input type="checkbox"/>	<input type="checkbox"/>
a) Seat pan 15" - 19" deep	<input type="checkbox"/>	<input type="checkbox"/>
b) Seat pan minimum 18.2" wide	<input type="checkbox"/>	<input type="checkbox"/>
5. Has armrests	<input type="checkbox"/>	<input type="checkbox"/>
a) Good fit for user	<input type="checkbox"/>	<input type="checkbox"/>
b) Clearance under work surface for arm rests	<input type="checkbox"/>	<input type="checkbox"/>
6. Rounded front edge to avoid thigh pressure	<input type="checkbox"/>	<input type="checkbox"/>
7. Padded seat	<input type="checkbox"/>	<input type="checkbox"/>
8. Lumbar support in backrest	<input type="checkbox"/>	<input type="checkbox"/>
9. Guidance/training for users describing how to make adjustments	<input type="checkbox"/>	<input type="checkbox"/>

CHAIR AJUSTABILITY

1. Chair allows user to assume different postures	<input type="checkbox"/>	<input type="checkbox"/>
2. Seat height adjusts between 16" - 20.5"	<input type="checkbox"/>	<input type="checkbox"/>
3. Adjustable armrests	<input type="checkbox"/>	<input type="checkbox"/>
4. Adjustable height of backrest	<input type="checkbox"/>	<input type="checkbox"/>
5. Backrest adjustable forward/backward	<input type="checkbox"/>	<input type="checkbox"/>
6. Adjustments easily made from seated position	<input type="checkbox"/>	<input type="checkbox"/>

ENVIRONMENT

1. Lighting adequate for tasks	<input type="checkbox"/>	<input type="checkbox"/>
2. Display screen free of glare and reflections	<input type="checkbox"/>	<input type="checkbox"/>
3. Screen at right angle to windows	<input type="checkbox"/>	<input type="checkbox"/>
4. Screen character brightness at a comfortable level	<input type="checkbox"/>	<input type="checkbox"/>
5. Room temperature constant between 70 - 73 ^B	<input type="checkbox"/>	<input type="checkbox"/>
6. Noise level:		
a) Less than 55 dBA in task areas requiring intense concentration.	<input type="checkbox"/>	<input type="checkbox"/>
b) Less than 65 dBA in routine task areas	<input type="checkbox"/>	<input type="checkbox"/>
c) Environment free from distracting high noise levels (from printers, copiers, etc.)	<input type="checkbox"/>	<input type="checkbox"/>
7. Environment free of hot or cold areas, e.g. under desks, in corners, etc.	<input type="checkbox"/>	<input type="checkbox"/>

COMPUTER ERGONOMICS

Ergonomics involves arranging, adapting, and adjusting your work environment to promote comfort and efficiency. Practicing good posture is also very important. Are you comfortable at your workstation? Review the items below to see if you can add to your comfort and efficiency.

SCREEN

Keep the top of the screen at or just below eye level, approximately 16 - 22 inches away.

CHAIR

Learn the adjustments on your chair. Keep back supported, feet flat on floor or use foot rest, if needed. Knees at approximately 90° when seated, with lower legs perpendicular to floor. Legs should be able to move freely under your desk.

KEYBOARD

Place keyboard at a height so wrists are straight and elbows approximately 90°. A wrist rest may provide additional support to wrists. Maintain a light touch on the keyboard.

DOCUMENT HOLDER

Place document holder and screen at the same height and distance.

CHANGE POSITIONS

Frequently shift positions to release tension on body.



EYE COMFORT

Reduce glare by controlling light from uncovered windows. Set computer at right angle to a window. Adjust inside lighting or reposition computer to eliminate glare. A glare screen might assist. Frequently refocus eyes on objects far away. Uncorrected vision problems can cause eye strain; see your doctor!

ORGANIZE WORK AREA

Keep most frequently used items such as telephone and calculator within easy reach.

EXERCISE

Warm-up before work by doing simple exercises. Micro-breaks throughout the day can help energize the body and relieve muscle tension.

COMMUNICATION/TRAINING

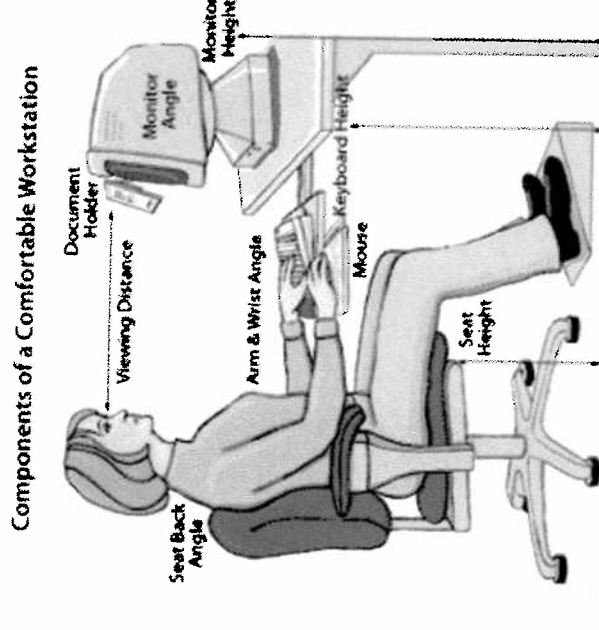
Employee involvement in the equipment selection process, communication between employee and supervisor, user friendly software, and training can help maintain stress levels and provide for a productive work environment.

MIOSHA

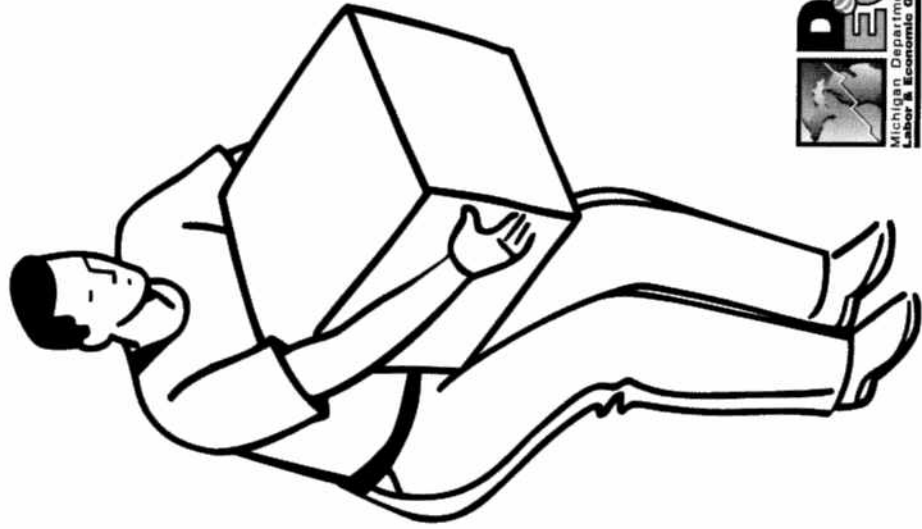
Consultation Education & Training (CET) Division
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MIOSHA/CET #0104 (Revised 06/10)



LIFT ME SAFELY!



**Use your
legs...
Protect your
back!**

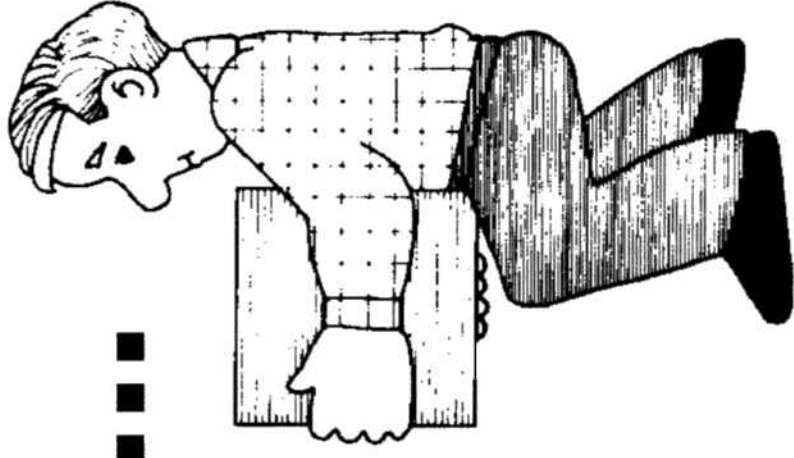


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WHEN LIFTING...

- **Keep the load close**
- **Don't twist while lifting**
- **Turn by shifting your feet**
- **Get help if needed**



Safety Message from

Michigan Department of Labor & Economic Growth

Consultation Education & Training Division

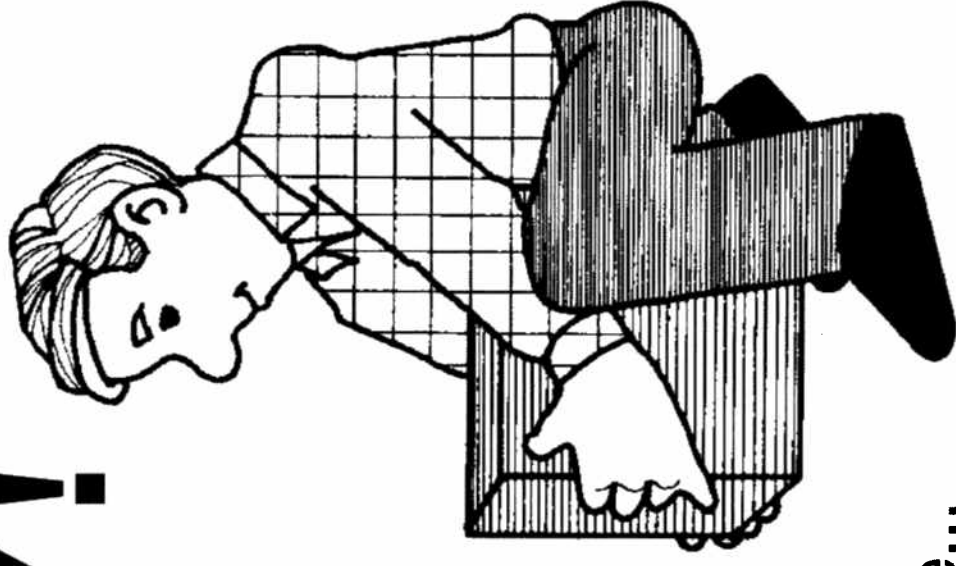
MIOSHA/CET #0203 (12/03)



LIFT SAFELY!

**Use Your
Legs...**

**Protect Your
Back!**



More...



Five Minute Safety Talk No. 1

"Safe Lifting Techniques"

CONSULTATION EDUCATION &
TRAINING DIVISION

Can you think of even one job or occupation where you never have to lift an object? I can't. Lifting of objects can range from very light objects such as a piece of paper, a pin or a pen to very heavy objects like loads of boxes. Lifting is very much a part of our every day jobs. And, because it is something we do so often, we tend to do it without thinking, or at least we do until we strain a muscle, or worse, hurt our backs.

Lifting incorrectly can result in a variety of injuries. Back strain is a very common one. It results from over-stretching certain muscles, but it can be avoided by practicing safe lifting techniques. A hernia is another injury associated with lifting. A hernia does not generally result from a single lifting effort. It is usually the result of continued extreme exertion, especially done contrary to the structure of body.

Don't underestimate the importance of being in good physical condition. Years of poor posture, overeating, lack of exercise, stress and improper lifting can catch up with you. Learn how your back works and what you can do to keep it strong. Ask for your physician's recommended stretching, warm-up, and reconditioning exercises; then practice them regularly.

Safe lifting plays an important role in keeping your back healthy. Although there doesn't seem to be just one right method to lift an object, there are lifting techniques that take strain off the low back area.

These techniques have several steps in common. They recommend you "size up the load". That is, look it over. Decide if you can handle it alone or if you need help. When in doubt, ask for help. Moving a box or other object that is too heavy for one person is not worth strained and sore back muscles.

You should also "size up the area". Look over the area where you are carrying the object to, and make sure it is clear of obstacles before beginning to carry the object.

For that period of time spent lifting, the load becomes a part of your body. You support and propel the object while it is attached to you. This attachment should be firm and sure. Get a good grip.

Attaching yourself to a load will change your balance. To keep this change of balance to a minimum, keep the load close to your body, to your normal center of gravity between the legs, between the shoulders.

Good foot position allows you to keep your balance and bring into play the full power of your leg muscles. Leg muscles are more powerful and more durable than back muscles. Let your leg muscles do the work. Again, footwork is important once you avoid twisting your upper body. Use your feet to change direction. Don't twist your body. Twisting compounds the stress of the lift and affects your balance.

When you have someone helping you lift an object, teamwork becomes important. If you're going to be carrying the load to another point, both of you should decide in advance how it is to be handled. Check the route and clearance. One person should be the leader and be in a position to observe and direct the other. Lifting and lowering should be done in unison. Don't let the load drop suddenly without warning your partner.

Everyone has a way of lifting that seems most natural. Examine yours to see if you are using lifting techniques that reduce strain on your lower back. As the employee making the lift, you're being counted on to make lifts that are safe and comfortable for you based on the items we've discussed:

Stay in shape

Size up the load; ask for help, if needed

Get a good grip

Keep the load close

Keep your balance with footwork

Let your leg muscles do the work

Don't twist your body

Notes:





Michigan Department of Energy, Labor & Economic
Growth

Michigan Occupational Safety and Health
Administration

Consultation Education & Training Division

7150 Harris Drive, Box 30643

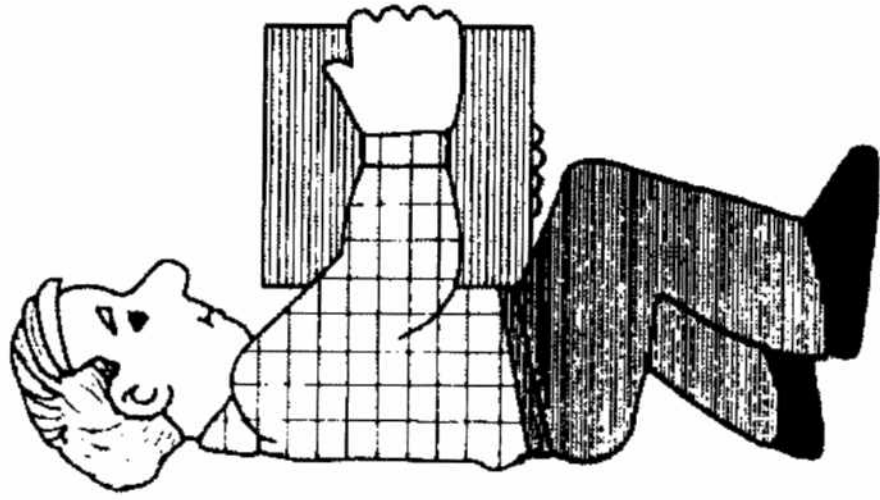
Lansing, MI 48909-8143

(517) 322-1809

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LIFT ME SAFELY!



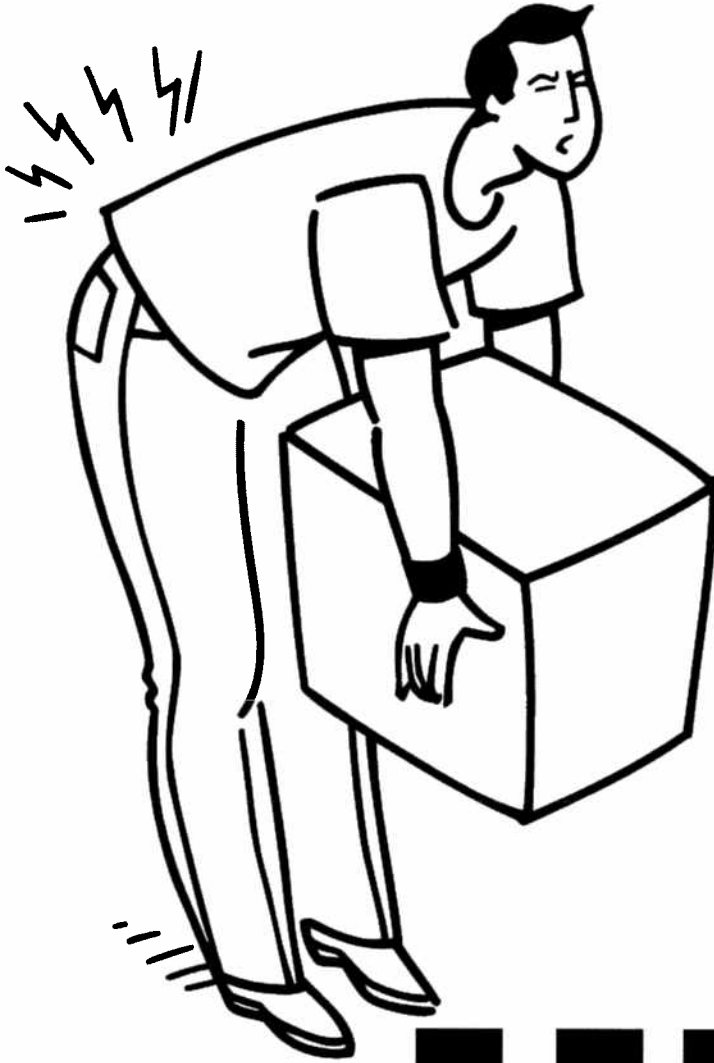
**Use your
legs...
Protect your
back!**



MICHIGAN DEPARTMENT OF LABOR &
ECONOMIC GROWTH
CONSULTATION EDUCATION & TRAINING DIVISION

MIOSHA-CET #0401 Rev. 3/04

HEAVY LOAD!



BETTER GET

HELP



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MIOsha/CET #0315 Rev. 1/10



Five Minute Safety Talk No.9

"Manual Handling of Materials"

CONSULTATION EDUCATION & TRAINING DIVISION

The best way to handle boxes and cartons is to grasp the opposite top and bottom corners and draw a corner between your legs before lifting. Long pieces of pipe, bar stock or lumber should be carried over a padded shoulder with front end held high to avoid hitting other employees. Special caution should be used at corners.

There are several areas in material handling that require considerable skill—the rolling of heavy round objects and the handling of heavy barrels and drums. Special training and devices should be used before attempting to handle these tough items manually.

Needless to say, you've probably already encountered your share of slivers, loose hardware or anything else that could cause injuries. Again, good work gloves are helpful.

Regular inspection of tools and equipment is important. A dull or faulty tool can cause an injury to you and a cracked handle could mean an injury for you or your neighbor. So, be sure to report damaged equipment.

We can't mention too often the importance of using the right tool for the job. Don't attempt to use your fingers as a pry, a wrench for a hammer, or a screwdriver for a chisel; you'll just be inviting a painful injury.

Handling of materials does not necessarily mean we have to become engaged in hand-to-hand combat with them, but the results may be the same if we don't use all available protection and precautions.

You don't have to be involved in manual material handling very long to discover there's a hard way and an easy way to do things. And maybe you've also discovered that the easy way isn't always the safe way. Skinned knuckles or pinched fingers are instant reminders that something wasn't done correctly. So for a few moments let's review some of the precautions to protect ourselves while handling materials.

First, considerable hand protection can be gained by wearing work gloves. They can prevent many cuts and scratches and many types also give a better grip. Most work gloves are ventilated for the comfort of the wearer, so there's no good excuse for not wearing them when the occasion calls for them.

Conservation of space is important but sometimes we tend to pile things too close to a wall or column. Proper clearance at the top and on all sides of piles is necessary for safety. When material is piled, it should be in stacks that will stand steady. Sometimes this means that the materials must be criss-crossed or interleaved with corrugated board. Objects that roll should be chocked. When a pile falls, serious injury

and damage can result. Piling too high, or in a manner that will interfere with lighting or circulation of air, should be avoided.

Don't be afraid of putting the cleaning crew out of a job by picking up things that you drop on the floor. Tripping and slipping hazards could put both you and the cleaners out of work for a long time. Keep tools and other articles in the right bin or drum and wipe up spills right away.

Injuries resulting from lifting are a continual problem both on and off the job. Most of us know we should crouch close to the load and then use leg muscles to lift. However, after the lift has been made, it's very important to turn correctly while carrying an object. Don't twist your body. Turn by shifting your feet or with short steps. Before lifting, make sure there are no obstructions or slippery spots on the route you intend to travel. If it's necessary for two or more workers to carry an object, they should both be about the same weight and one should be position to watch and coach the other en route.

To request consultation education and training services, call: 517.322.1809



Michigan Department of Energy, Labor & Economic
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Michigan Occupational Safety and Health
Administration
Consultation Education & Training Division
7150 Harris Drive, Box 30643
Lansing, MI 48909-8143
(517) 322-1809

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MIOSHA Fact Sheet

General Industry Safety & Health Division

Ergonomics

What is “Ergonomics?”

Simply put **Ergonomics is fitting the task to the person.** Too often employees perform job tasks that expose them to potential injuries and illnesses due to the poor design of a workstation or tool they are using. Ergonomics involves the assessment of job tasks to identify ergonomic risk factors and subsequently the implementation of engineering or administrative controls to reduce or eliminate the hazards. Generally, ergonomic changes are made to improve the fit between the demands of the job tasks and the capabilities of the employees.

What are Ergonomic Risk Factors?

Ergonomic risk factors are characteristics of a job that contribute to the creation of ergonomic hazards. Risk factors are present at varying levels for different jobs and tasks. Generally, the greater the exposure to a single risk factor or combination of risk factors, the greater the probability of an ergonomic injury or illness.

The big three ergonomic risk factors are Force (how much you lift/push/pull), Repetition (how often you perform the task), and Posture (body position). Other potential ergonomic risk factors include vibration, contact stress, sustained exertions, and cold temperatures.

What are the Basic Elements of an Ergonomic Program?

Much like overall health and safety programs, effective ergonomic programs utilize a systems approach involving the following elements.

Management Commitment and Employee Involvement – Successful ergonomic programs are those that have everyone moving in the same direction working towards a common set of goals. The full backing of management is necessary which includes allocating resources and time to the cause. Employees perform the job tasks and many times are best prepared to assist with solving the problems.

Worksite Hazard Assessments – Establish an ergonomic committee comprised of management and employees to devote time to ergonomic issues including conducting assessments of job tasks that are showing early signs of or are actually causing ergonomic-related injuries and illnesses.

Hazard Prevention and Control – Pursue equipment purchases, workstation redesigns, modified work practices, and other tools that are identified by the ergonomic committee as ways to reduce or eliminate ergonomic hazards.

Education and Training – Provide ergonomic training for appropriate employees and management staff on how to recognize the primary ergonomic risk factors of Force, Repetition, and Posture. Educate them on the early symptoms of ergonomic-related injuries and illnesses and the proper procedures for reporting and/or recording them.

Medical Management – Implement a medical management program that includes establishment of one occupational physician or group that is familiar with your operation. Refer all employees who have suspected workplace ergonomic injuries and illnesses to this physician or group for appropriate diagnosis and treatment.

What is the Cost \$\$ to Address Ergonomic Issues?

Many believe they can't afford to address ergonomic issues in their facility. The reality, in most cases, is that they can't afford NOT to address ergonomic issues. Ergonomic hazards are estimated to account for about 40% of the Workers' Compensation claims paid in Michigan in 2006 and 2007.

Effective ergonomic programs will actually save or even make money by decreasing workers' compensation claims and/or insurance premiums; increasing productivity, quality, and moral; and potentially decreasing the generation of scrap and waste. By preventing ergonomic injuries and illnesses the net result will include reductions in employee absenteeism and turnover. How much does it cost to hire and train a new employee? The overall benefits of ergonomic programs far outweigh the costs especially when the pain and suffering of employees is taken into consideration. Many times ergonomic injuries and illnesses are much more painful and take much longer to recover from than other injuries or illnesses.

Robert Bosch LLC in St. Joseph, Michigan is an example of a win-win when it comes to ergonomics. In a letter to MIOSHA they stated, "Bosch has taken the matter of ergonomics seriously in an effort to preserve the company's human capital, while simultaneously improving operator abilities to produce quality products and provide quality services to it's customers...a number of projects have exemplified continuous improvement in our manufacturing processes, and this effort has had a positive impact on reducing musculoskeletal injuries and incidences of repetitive trauma...As a result of our efforts, the OSHA log for the St. Joseph, Michigan plant indicates a **46% reduction in recorded incidences** involving musculoskeletal injuries and incidences of repetitive trauma from 2006 to 2007...**Workers compensation costs for the plant dropped 80% from 2006 through 2007.**"

Another example of savings that can be achieved by implementing an ergonomic program is **Lacks Enterprises in Grand Rapids, Michigan**. Lacks, a supplier of automotive, electronics and telecommunications products, started with a pilot program and expanded to a corporate-wide effort to reduce Cumulative Trauma Disorders (CTD). The program included both equipment design changes and employee training. Since implementation in 1997, Lacks has reduced CTD claims by over 93%, which translates to healthier employees and about \$900,000 in annual savings for the corporation.

Are there any MIOSHA Standards that cover Ergonomics?

Not directly! While MIOSHA does not currently have an ergonomic enforcement standard, our agency has the authority to enforce Section 408.1011(a) [the general duty clause] of Act 154, Michigan Public Acts of 1974, as amended, when necessary to prevent work-related ergonomic injuries or illnesses. Click on the hyperlink to quickly access the general duty clause found in Michigan Public Act 154 on-line. [MIOSHA General Duty Clause](#). In addition, MIOSHA has an enforcement instruction, [Ergonomic Instruction](#), which details the procedures compliance officers follow when conducting ergonomic investigations.

How can I get more information?

More information is available from the MIOSHA Consultation Education and Training Division at (517) 322-1809 or on-line at www.michigan.gov/cet.

There is a considerable amount of information on ergonomics including industry specific help on the Federal OSHA website at [OSHA Ergonomics](#)

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